

SHOWCASE PROJECT: AEON: THE LANDING APARTMENTS

SOLUTION OVERVIEW

Following successful completion of a multi-building, multifamily development on the western edge of Chaska, the City approached Aeon with a new development opportunity aimed at addressing the need for affordable senior housing. Located adjacent the City's Historic Downtown, The Landing Apartments represents a balance in design that addresses the City's development goals; maintains the character of the City's historic downtown and River District; and meets Aeon's goals for sustainability and for providing safe, quality homes for seniors.

The Landing Apartments is an affordable, multifamily, senior housing development that is organized as its own nonprofit entity that Aeon controls.

From 2000 to 2030, the number of residents age 65 and older in Carver County is anticipated to quadruple to 24,490. The Landing will assist the City of Chaska in achieving its goal to encourage the development of housing with a range of rents to allow residents to stay in the city as they enter their "golden years."

The Landing will offer seniors and the city of Chaska 54 affordable one-bedroom apartment homes with easy access to the greater community. In addition, the creation of senior housing often frees up single family homes for young families helping to create a diverse and vibrant community for residents of all ages and incomes.

SECTOR TYPE

Multifamily

LOCATION

Chaska, Minnesota

PROJECT SIZE

50,000 square feet

FINANCIAL OVERVIEW

Project Cost \$9,500,000

SOLUTIONS

Aeon worked closely with the City to ensure that design met the needs of current and future residents as well as complimented the surrounding River and Historic Districts. The Landing Apartments is moving forward on design that focuses on aggressively reducing the building's energy consumption. Passive House principles such as superinsulation, building orientation, and thermo coupling, as well as geothermal heating and cooling, were also integrated into the building's design.

With the integrative design process complete, and HUD and geothermal-specific funding secured, The Landing Apartments proceeded to construction in April 2013 and opened in March 2014.

Early in The Landing's design process, goals of high energy efficiency and low environmental impact were established. Aeon's intent was two-fold: to incorporate our learnings on life-cycles into The Landing's design – effectively lowering long-term operating costs to be reflected in increased long-term affordability – and to advance sustainable affordable housing development. Project challenges proved themselves in HUD regulations, the availability of affordable housing funding resources, and City requirements. In balancing these challenges, and achieving the goals established by this development, a number of Passive House principles were employed including:

- **Superinsulation** – Walls are anticipated to have an R value of 31 – achieved using 2x8 studs and 1" exterior insulation. Roof trusses received full depth insulation with rigid insulation on deck for an expected R value of 102.
- **Envelope** – Air infiltration was reduced using several measures including:
 - Spray foam at weak points;
 - Detailing and observing correct assembly;
 - Use of 'Smart' air and vapor barriers; and
 - Fewer penetrations (due primarily to incorporation of geothermal system).
- **Heating and Ventilation** – Use of HRV and ERV mechanical systems along with geothermal.
- **Orientation** – Placed as much of the building as possible along east-west axis as well as reduced building footprint thereby reducing surface area at walls and roof.
- **Solar Control** – a highly reflective roof, exterior sun shades, pergola, and porch roofs were installed to minimize heat gain.
- **Lighting and Appliances** – Energy Star® appliances and light fixtures reduce internal heat load and overall energy consumption. Daylighting controls were also used to capitalize on daylighting strategies.

While not Passive House certified, The Landing has been modeled to perform at 33% better than baseline. Modeling predicted an EUI of 48.06 kBtu/sf; while the EUI presented in The Weidt Group Inc.'s final modeling is higher than initially anticipated – due, in part to the pricing and availability of high efficiency heat pumps – the expectations of the project architect, contractor, and owner's representative are that the actual EUI will be even lower than modeled.

OTHER BENEFITS

Through its intentional design, The Landing addresses many of the challenges of senior living. For example, its community spaces promote social interaction among seniors. The central location

offers senior residents convenient access to health care, religious facilities, recreational trails, a library, public transportation, and the historic commercial district of downtown Chaska . This building will be certified through Enterprise Green Communities, confirming the holistic green building programming Aeon has planned for The Landing Apartments.

Annual Energy Use

(Source EUI)

Baseline(2013)



Actual(2014)



Energy Savings

29%

Annual Energy Cost

Baseline(2013)



Actual(2014)



Cost Savings

\$22,200



Public fireplace lounge



Landing Apartments main entrance